AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Original) A system for receiving and delivering into a base the radial loads imposed on a crane, wherein the crane has a center post operably connected to the base, the center post has a generally cylindrical outer bearing surface, and the crane rotates in at least a partial circle around a rotational axis of the center post, the system comprising:

a plurality of rollers arranged in a linked sequence along the outer bearing surface of the center post, each roller having an axis of rotation that is generally parallel to the rotational axis of the center post;

an anchor for anchoring a first roller at one end of the linked sequence and an anchor anchoring a second roller at the other end of the linked sequence; and

a link connecting each roller between the first and the second rollers to its adjacent rollers to form a flexible chain of said rollers,

wherein the linked rollers are in rolling contact with the outer bearing surface.

2. (Original) The system of claim 1, wherein the link comprises pivoting links and fixed links, wherein each roller between the first and second rollers is connected by a pivoting link to one of its adjacent rollers and by a fixed link to the other of its adjacent rollers.

3. (Original) The system of claim 1, further comprising a back roller including a rotational axis generally parallel to the rotational axis of the center post and a roller surface in rolling contact with the outer bearing surface, wherein the back roller is secured to a superstructure of the crane and positioned along the outer bearing surface in a location not encompassed by the flexible chain of rollers.

4. (Original) The system of claim 1, further comprising a containing pad secured to the crane center post and/or a superstructure of the crane and adapted to prevent the displacement of the flexible chain of rollers in at least one vertical direction.

5. (Original) The system of claim 1, further comprising a flange supported off of a superstructure of the crane and adapted to prevent the displacement of the flexible chain of rollers in at least one vertical direction.

6. (Original) The system of claim 1, wherein the flexible chain of rollers encompasses at least approximately 120 degrees of the cylindrical outer bearing surface of the crane center post.

7. (Original) The system of claim 1, wherein the flexible chain of rollers encompasses at least approximately 180 degrees of the cylindrical outer bearing surface of the crane center post.

8. (Original) The system of claim 1, wherein the flexible chain of rollers encompasses at least approximately 270 degrees of the cylindrical outer bearing surface of the crane center post.

9. (Original) The system of claim 1, wherein the outer bearing surface comprises a rail and the rollers are flanged to engage the rail.

10. (Original) The system of claim 1, wherein the rollers have a double inclined face, the outer bearing surface comprises a rail with a V profile, and the double inclined face of the rollers matingly interfaces with the V profile of the rail.

11. (Previously Presented) The system of claim 1, wherein each roller has a face, at least a portion of which is arcuate, the outer bearing surface comprises a profile, at least a portion of which is arcuate, and the arcuate portion of the roller faces matingly interface with the arcuate profile.

12. (Original) A method for receiving and delivering into a base the radial loads imposed on a crane, wherein the crane has a center post operably connected to the base, the center post has a generally cylindrical outer bearing surface, and the crane rotates in at least a partial circle around a rotational axis of the center post, the method comprising:

providing a plurality of rollers in a linked sequence along the outer bearing surface of the center post, each roller having an axis of rotation that is generally parallel to the rotational axis of the center post;

providing anchors for anchoring a first roller at one end of the linked sequence and anchoring a second roller at the other end of the linked sequence;

providing each roller between the first and the second rollers with a link to its adjacent rollers to form a flexible chain of said rollers; and

tensioning the linked sequence to draw each roller into rolling contact with the outer bearing surface.

13. (Original) The method of claim 12 wherein the link to the adjacent rollers comprises pivoting links and fixed links, wherein each roller between the first and second rollers is connected by a pivoting link to one of its adjacent rollers and by a fixed link to the other of its adjacent rollers.

14. (Original) The method of claim 12, further comprising providing a back roller including a rotational axis generally parallel to the rotational axis of the center post and a roller surface in rolling contact with the outer bearing surface, wherein the back roller is secured to a superstructure of the crane and positioned along the outer bearing surface in a location not encompassed by the flexible chain of rollers.

15. (Original) The method of claim 12, further comprising preventing the displacement of the flexible chain of rollers in at least one vertical direction.

16. (Original) The method of claim 12, further comprising encompassing at least approximately 120 degrees of the cylindrical outer bearing surface of the crane center post with the flexible chain of rollers.

17. (Original) The method of claim 12, further comprising encompassing at least approximately 180 degrees of the cylindrical outer bearing surface of the crane center post with the flexible chain of rollers.

18. (Original) The method of claim 12, further comprising encompassing at least approximately 270 degrees of the cylindrical outer bearing surface of the crane center post with the flexible chain of rollers.

Claims 19-41 (Canceled).

42. (Original) A method of delivering radial loads from a first structure into a bearing surface of a second structure, wherein the bearing surface forms at least a partial arc about a first axis and the first structure is rotationally displaceable about the first axis, the method comprising:

routing a roller chain along at least a portion of the bearing surface, said roller chain including a first end, a second end, and a plurality of flexibly interlinked rollers between the first and second ends, each roller including an axis of rotation that is generally parallel to the first axis;

operably connecting the first end of the roller chain to a first anchor point on the first structure;

operably connecting the second end of the roller chain to a second anchor point on the first structure; and

causing each roller to rollably contact the bearing surface.

43. (Original) The method of claim 42, further comprising causing the roller chain to radially displace along the bearing surface as the first structure rotates about the first axis.

44. (Original) The method of claim 43, wherein the rollers rollably travel along the bearing surface as the roller chain radially displaces along the bearing surface.

45. (Original) The method of claim 42, wherein the first and second anchor points are radially offset from each other about the first axis by at least approximately 120 degrees.

46. (Original) The method of claim 42, wherein the first and second points are radially offset from each other about the first axis by at least approximately 180 degrees.

47. (Original) The method of claim 42, wherein the first and second points are radially offset from each other about the first axis by at least approximately 270 degrees.

48. (Original) The method of claim 42, further comprising tensioning the roller chain to equalize substantially the radial loads applied by the interlinked rollers to the bearing surface.

49. (Currently Amended) A crane supported off of a base, the crane comprising:

a center post including a top end, a bottom end for coupling to the base, a first bearing surface, and a second bearing surface, wherein the first bearing surface extends in a generally arcuate manner about a vertical axis of the center post and generally faces away from the vertical axis in a direction generally normal to the vertical axis, and wherein the second bearing surface extends in a generally arcuate manner about the vertical axis and generally faces upward;

a superstructure including a roller chain and a third bearing surface, wherein the third bearing surface extends in a generally arcuate manner about the vertical axis and generally faces ~~downward and~~ downward to oppose the second bearing surface, and wherein the roller chain is located above the second and third bearing surfaces and encompasses at least a segment of the first bearing surface and includes:

a first roller, a second roller, and a third roller, each roller including a rotational axis generally parallel to the vertical axis and a roller surface in rolling contact with the first bearing surface, wherein the rollers are radially offset from each other along the first bearing surface;

a first member interlinking the first and second rollers and maintaining an offset distance between the first and second rollers; and

a second member pivotal relative to the first member, interlinking the second and third rollers and maintaining an offset distance between the second and third rollers; and

a fourth roller received between, and in rollable contact with, the second and third bearing surfaces.

50. (Previously Presented) The crane of claim 49, further comprising a boom pivotally coupled to the superstructure.

51. (Previously Presented) The crane of claim 50, further comprising a bearing system adjacent the top end of the center post and operably coupled to the boom.

Claims 52-53 (Canceled).

54. (New) The crane of claim 49, wherein the superstructure further includes a boom foot with a boom pivot located above the roller chain.

55. (New) The crane of claim 49, further comprising a swivel post near the top of the center post.

56. (New) A crane comprising:

a vertical post including a post bearing surface forming at least a partial arc about a vertical axis of the vertical post;

a superstructure pivotal about the vertical post and including a boom foot having a pivot point;

a boom extending from the boom foot and pivotable in a vertical plane about the pivot point in response to one ore more lines extending between the boom and a swivel-post head near a top of the vertical post;

a single roller chain encompassing at least a segment of the post bearing surface and comprising:

a plurality of rollers arranged in a pivotally-linked sequence, each roller including a rotational axis generally parallel to the vertical axis of the vertical post and a roller surface in rolling contact with the post bearing surface, wherein the rollers are distributed with equal spacing on an arc along the post bearing surface with at least 180 degrees between a first roller and a last roller;

a first anchor coupled to the crane superstructure and operably, pivotally-linked to the first roller; and

a second anchor coupled to the crane superstructure and operably, pivotally-linked to the last roller; and

the first and second anchors being positioned to make the arc of the roller chain substantially symmetrical with respect to the vertical plane of boom motion and to tension the rollers against the post-bearing surface, whereby the pivoting action of the rollers maintains substantially equal distribution of radial loads from the boom across all rollers in the roller chain.

57. (New) The crane of claim 56, wherein the pivot point is located above the roller chain.

58. (New) The crane of claim 56, further comprising:

a support collar radially extending from the vertical post;

an annular ring extending from the superstructure; and

a container ring including a plurality rollers having rotational axes generally perpendicular to the vertical axis and wherein the rollers rollingly displace between the support collar and the annular ring.

59. (New) The crane of claim 58, wherein the container ring is located below the roller chain.

60. (New) The crane of claim 56, wherein the post bearing surface is the outer surface of the vertical post.

61. (New) The crane of claim 56, wherein the post bearing surface has a rail and at least one roller of the roller chain is flanged to engage the rail.

62. (New) The crane of claim 56, wherein the rollers of the roller chain have a double inclined faces, the post bearing surface has a rail with a V profile, and the double inclined faces of the rollers matingly interface with the V profile of the rail.

63. (New) The crane of claim 56, wherein the rollers of the roller chain have arcuate faces, the post bearing surface has an arcuate face, and the faces of the rollers of the roller chain matingly interface with the arcuate face of the post bearing surface.

64. (New) The crane of claim 56, further comprising a back roller including a rotational axis generally parallel to the vertical axis and a roller surface in rolling contact with the post bearing surface, wherein the back roller is operably coupled to the superstructure and positioned along the post bearing surface in a location not encompassed by the roller chain.

65. (New) The crane of claim 56, further comprising a containment pad secured to the vertical center post and/or the superstructure and adapted to prevent the displacement of the roller chain in at least one vertical direction.

66. (New) The crane of claim 56, further comprising a flange supported by the superstructure and adapted to prevent the displacement of the roller chain in at least one vertical direction.

67. (New) The crane of claim 56, wherein the roller chain encompasses at least approximately 270 degrees of arc along the post bearing surface of the vertical post.

68. (New) The crane of claim 56, wherein the equal spacing of the rollers comprises a radial offset between consecutive rollers in the chain between approximately two degrees and approximately 20 degrees.

69. (New) The crane of claim 56, wherein the equal spacing of the rollers comprises a radial offset between consecutive rollers in the chain between approximately five degrees and approximately 15 degrees.